



approved  
sustainable  
**aesthetic**  
colourful  
versatile  
durable  
resistant  
interesting  
compact

Ready-to-use render for  
facades and interiors

# “Quality prevails and remains”

*Michael Bross, Director of the German Paint and Printing Ink Association (VdL)*

## **The art of protecting and designing buildings**

They have been in successful use for more than 60 years – organically bonded coatings for the protection and design of buildings, for both outer and inner walls. A success story whose message is concisely described by an advertising poster from the year 1955: “Quality prevails and remains”.



*The work of researchers and developers has made organically bonded paste-like plasters possible. Indispensable materials for energy-optimised and attractively designed facades which have become so familiar in our townscapes.*

# app

The introduction of organically bonded finishing coats for buildings was a revolution in itself and brought a number of benefits to those involved in the construction process. Modern plasters in paste form combine performance characteristics with the features of mineral plasters. These include excellent processing and water-repellent qualities, mechanical toughness and stability of colour – all this in a product which permits the perfect diffusion of water vapour and possesses optimum mineral structure.

*“The special technical characteristic of organically bonded plasters is their high mechanical strength. Integrated in the right system, they are capable of the highest performance with regard to impact and hail protection, crack resistance, colour stability as well as resistance to micro-organisms and water.”* Michael Bross

Although organically bonded finishing coats have been meeting all the important demands made on interior and exterior coats for over 60 years, they have undergone a steady change over the course of that time. The constantly increasing requirements with regard to heat-insulating facades and the environmental awareness of the users of buildings have provided much of the impetus behind the development of paste-like plasters.

*“Whereas the first organic plasters were solvent-based, our premium-range products are now completely solvent-free.”* Michael Bross

In addition, technical progress in the field of modern high-performance polymers has now enabled the

use of clean stable bonding agents and additives in finishing coats designed specifically for interior and exterior application.

*“Increasing health-consciousness has produced a distinct separation between plasters for interior and exterior use.”* Michael Bross

Thanks to systematic research and development work, the range of applications for organically-bonded plasters has expanded rapidly. This includes the entire range of silicone, dispersion and silicate plasters in paste form as well as functional finishing plasters (e.g. with lotus effect) with all their specific product and application characteristics.

The myth that finishing coats with organic bonding agents envelope buildings like a plastic sheet was refuted years ago, and organically bonded coats are now to be found in the highest vapour-diffusion category “VI” as defined by the standard EN 1062-1.

*“In view of the physical characteristics of organically bonded finishing coats, the story with the plastic wrapping has been proved a fable.”* Michael Bross

And with regard to sustainability, high-quality tested products score on two more accounts. If sustainable is defined as “biocide-free”, there are a number of organically-bonded products which fulfil this criterion unconditionally. And if it is defined as “long life”, organic finishing coats can be classed as a contribution to the long-term conservation of natural resources.

# proved

### Think about tomorrow today

We can learn sustainably, consume and invest sustainably. In virtually all walks of life, sustainability action has become an important consideration. This also applies in the field of construction and renewal. The term "sustainability," first coined at the 1992 international conference for environment and development in Rio de Janeiro, has now become established everywhere as a principle for planning, preparing and improving the future. For example by using environmentally-friendly materials, buying goods which have not travelled thousands of miles around the globe and choosing products whose quality and efficiency fit them for long years of use.

### Perfect quality, down to the last detail

Modern high-performance dispersion coats are sustainable in many different ways:

- **through their composition:**

Dispersion plasters consist of up to 80 per cent of mineral materials such as marble, limestone and



*Tested: dispersion plasters sustainably convincing.*

quartz. Cellulose serves as a thickener and water determines the consistency. Based on aqueous bonding agents, they contain a very low quantity of organic solvents (aromatic-free) or none at all. If at all, only a very small proportion of film-forming agent is present in coatings for the outside of buildings. And low-emission decorative plasters are generally used for the inside.

- **through their quality**

The ravages of time have little effect on this type of plaster. Its surfaces defy wind and weather. They have a low tendency to soiling and can be cleaned again and again. Their ability to stretch allows them to bridge cracks in the substrate, and they stubbornly resist corrosive air pollutants.

- **through their combinability**

Dispersion plasters combine well with energy-saving facade systems without transforming them into vapour-tight envelopes. They prevent rainwater from entering the masonry from the outside while allowing water vapour to escape from the inside.

- **through their attractive colour**

Dispersion plasters retain their colour well. And what is pleasing to the eye is also protected and preserved, thus saving material and energy.

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**Good to know!**

The environmental assessment of dispersion coats is done by means of EPDs (Environmental Product Declarations). They provide architects planners and builders with figures and data which are essential for calculating a building's energy balance, environmental impact and duration of use.

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### Unique appeal, rich diversity

The creative freedom provided by plasters in paste form is virtually boundless, whether on the exterior or in the interior of buildings. They have a wide range of structural variants and grains and, in combination with their different methods of application, they provide the freedom necessary to achieve highly personalised designs, from puristic clarity to rustic country-house appearance. You can choose the coating which appeals to you most for new or reconstructed buildings, for renovation or conversion work. With ready-to-use fully

dyed paste-like plasters, you can achieve traditional structures such as scraped rendering, fine or grooved-finish, rolled rendering, modelling, felt or sprayed rendering in grain sizes (depending on the plaster type) from >1 to 6 mm, as well as completely novel surfaces with gloss, glimmer and a wide range of different colour effects.



The strength of plasters in paste form is the enormous scope they give for design. With their variety of structures, grains and colours as well as their different processing techniques, they transform any facade or interior wall into a surface of unique and timeless beauty.

Well designed inner and outer walls can make a building into an eye-catching work of craftsmanship. Creative techniques used by skilled tradesmen can bring them to life and fulfil individual design

requirements. And the best part is that they can be changed if they should ever lose their appeal. Organically bonded plasters are outstanding for their long life-span and they give buildings an attractive well-kept appearance over long periods of time. In short, houses with outer finishes of plaster in paste form make our towns more colourful and varied.



### **Commitment to colour**

Colour affects our mood. It gives character to our rooms, buildings, streets and entire cityscapes. Plain white, sunny yellow, soothing blue or elegant grey give a house its own distinctive appearance.

Dispersion plasters offer virtually an unlimited range of colour because they can be dyed with organic as well as inorganic pigments. The spectrum ranges from bright pastel shades to strong vivid colours without requiring any additional painting.

Because of their high elasticity, dispersion plasters provide the ideal coloured finish for compound heat-insulating systems. It also gives them a high mechanical resilience which in turn means a long life span. In combination with primer treatment, dispersion plasters are the ideal material for giving concrete surfaces an attractive and colourful finish.

# colour



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### **Differing requirements demand individual solutions**

Whether on the inside or outside of the building, dispersion silicate plasters have now become a many-sided element in design. Besides their decorative character, they are distinguished by their high permeability for water vapour. For this reason they are

widely used for monument conservation as well as for outside finishing coats on insulation systems and heat-regulating finishes in building interiors. Their ability to absorb water vapour allows them to stabilise the inside climate, thus providing a pleasantly comfortable feeling.

### **Planned wellbeing**

When used for interior purposes, these plasters provide a wide variety of shade, structure and grain, thus allowing designers the creative scope they need. Their open-pored slightly disrupted surface give them added attractiveness as coating materials. Dispersion silicate plasters have a high resistance to impact and shock, and with additional hydrophobing, they can even be classified as water-repellent. They consist for the most part of natural raw materials. The grainy effect for instance, is provided by marble granulates, while the modern bonding agents are completely solvent, emission and odour-free.

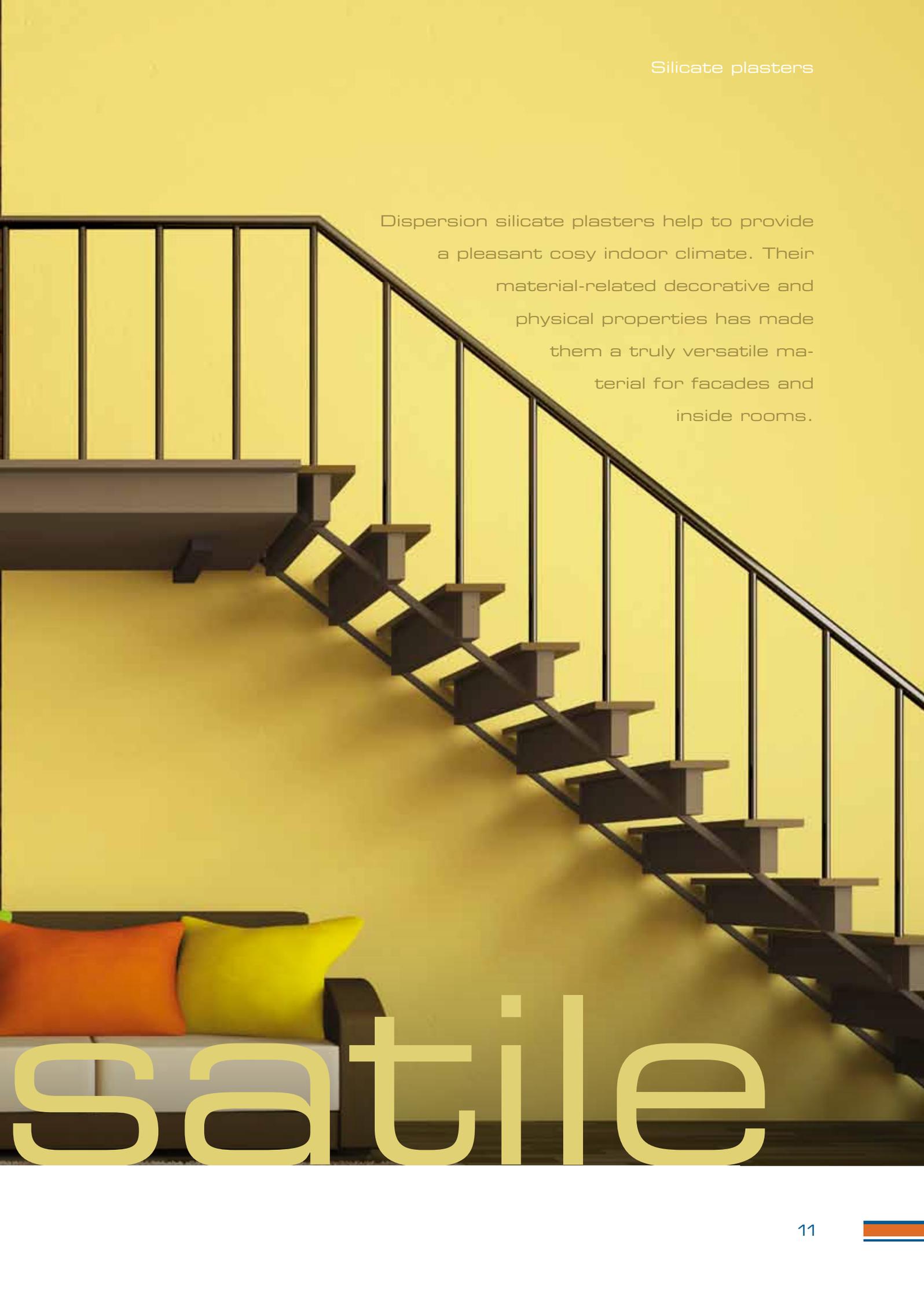
### **A real classic**

Mottled-stone plaster is a true classic among the paste-like plasters. Because of its multicolour effect and its ability to achieve an extremely smooth easily cleaned surface, it has become highly popular. In interiors, mottled-stone plasters are often used for pillars, columns and exposed wall surfaces especially in highly frequented areas such as stairways.



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Dispersion silicate plasters help to provide a pleasant cosy indoor climate. Their material-related decorative and physical properties has made them a truly versatile material for facades and inside rooms.



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### **The rendering with combined properties**

Silicone-resin plasters are the latest addition to a family of renders in paste form – and one with highly effective characteristics! In comparison with other plasters, silicone-resin plasters have the best physical properties because they combine the positive characteristics of purely dispersion plasters with the toughness of silicate plasters. This is the basis of their long life span, their resistance to weathering, outstanding processing characteristics and environmental compatibility. Above all, however, silicone-resin plasters have a highly water-repellent surface. They act like the latest generation of fabrics which allow moisture to diffuse outwards while

keeping the rain from entering (“Goretex” effect). Accumulations of dirt particles caused by rainwater penetrating the pores and capillaries are reduced to a minimum by silicone-resin plasters.

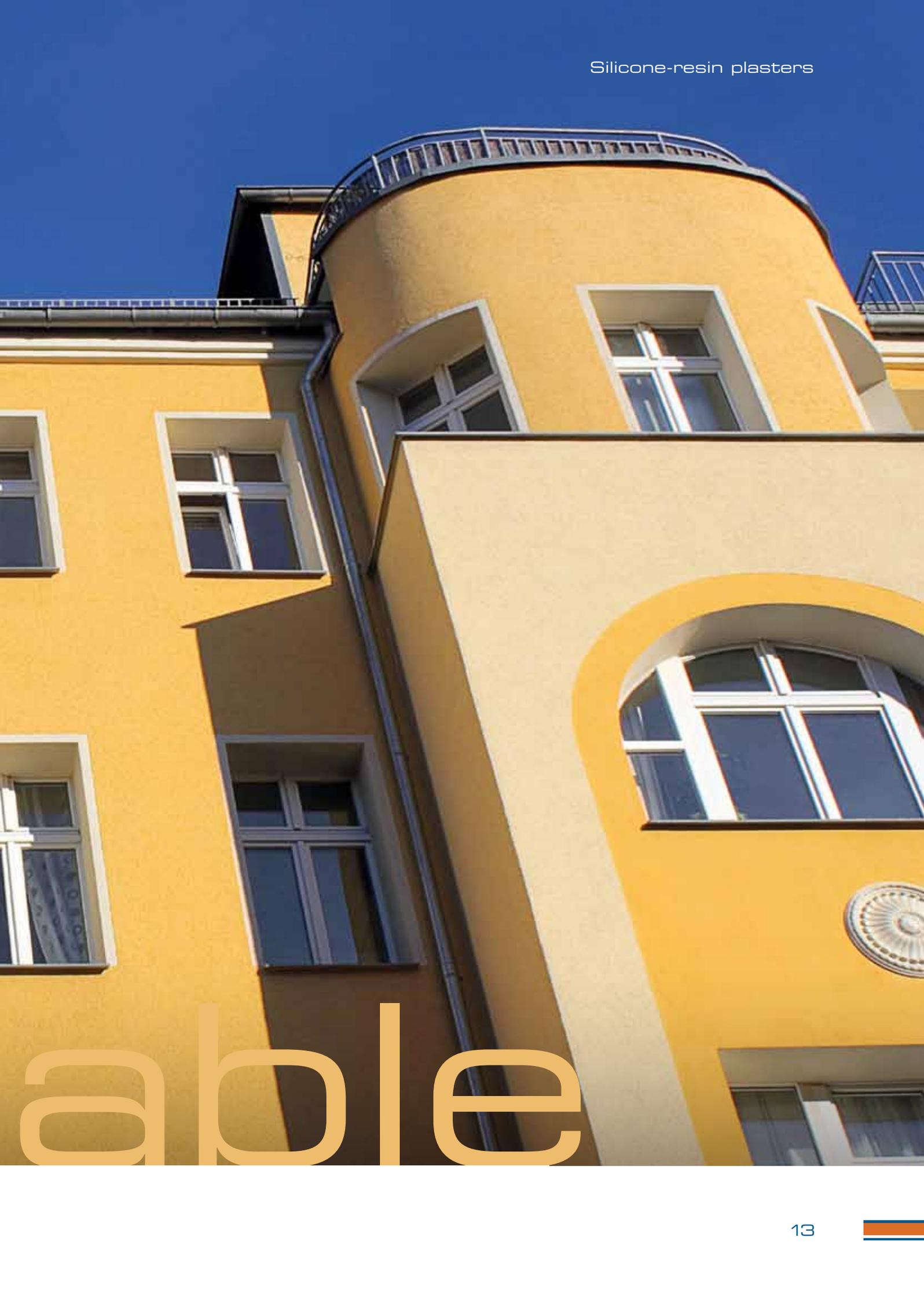
With a fully coloured coating of silicone-resin plaster, buildings have the ideal protection against dampness, wind-driven rain, chemical corrosion, algae, fungi and mechanical impact. These innovative coats retain their full protective effect over long periods of time.

### **Attractive and effective facade protection**

In addition to new and industrial constructions, silicone-resin plasters are finding increasing application in the field of facade refurbishment. The hydrophobic film-protected plaster offers especially effective protection against algae and fungi in composite thermal insulation systems. And the architect themselves can decide on the effect the facade should have on the observer,

because modern silicone-resin plasters offer a wide choice of colours. Thus, the building is not only protected from the elements, it is also attractive to the eye. No need to compromise!

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**Micro-organisms are part of nature,  
but not of a facade**

If a freshly renovated facade looks old again after just a few years, this is probably due to the algae and fungi which have colonised it. These are encouraged by moisture (rain and condensation) and particles of organic dirt in the air which create the right conditions for these organisms to multiply. Walls located close to bodies of water are particularly at risk, as are those in foggy areas or where trees and bushes grow against the facade. The result is that these walls are more often damp and therefore more easily colonised by algae and fungi. The growth of these organisms is

also affected by the rendering and coatings used for the facade. A study carried out by the Fraunhofer Institute for Construction Physics (IBP) has demonstrated that outer coatings with film protection can substantially delay the spread of algae and fungi. According to the study, the best protection of all is provided by rendering which is painted with (breathable) film-protected facade paint.

An additional coating of this type of product may therefore be advisable for buildings in areas with a damp micro-climate, for shaded sections of wall, and buildings close to woodland which are exposed to organic contamination (e.g. by pollen).



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Stains on a facade caused by algae and fungi are unsightly and reduce the value of a building. This problem can be effectively prevented by film-protected facade coatings.

**As little as possible, as much as necessary**

When plasters in paste form or facade paints with (breathable) film-protecting additives are used correctly, no health concerns whatsoever arise. Only substances, whose safe use has been scientifically demonstrated, are granted an approval under European law. Besides

this, the manufacturers ensure the long-term effectiveness of their products through optimised specifications and micro-encapsulated ingredients.

Further information on protecting facades from dirt and micro-organisms can be found under [www.putz-dekor.org](http://www.putz-dekor.org).



### A strong interest group

The group Putz & Dekor (plaster and decoration) within the Association of German Paint and Printing-Ink Manufacturers (VdL) is an organisation of the leading producers of facade and interior plasters and dispersion plasters on silicate and silicone-resin basis, and of the main suppliers of the raw materials for these plasters. The main objective of its work is to provide users with high-quality plasters in paste form. The members of the association have given a voluntary commitment to guarantee compliance with the current standards for their products. Their own standards of quality generally exceed the requirements of these general standards and a constant interchange of technical information further increases the quality and efficiency of the products. The technical group Putz & Dekor represents the common interests of its members in all matters of standardisation, e.g. at national (DIN) and European (CEN) level. In addition to technical support, the organisation also provides advice on matters of sale and distribution as well as problems arising from new legislation.

### Research

Paste-like plasters are innovative and ensure maximum performance. Their manufacturers are constantly at work on improvements. The technical group encourages continuous research, thereby guaranteeing

the user a product based on the latest scientific knowledge and development, application technology and construction physics in conjunction with natural raw materials of the highest quality.

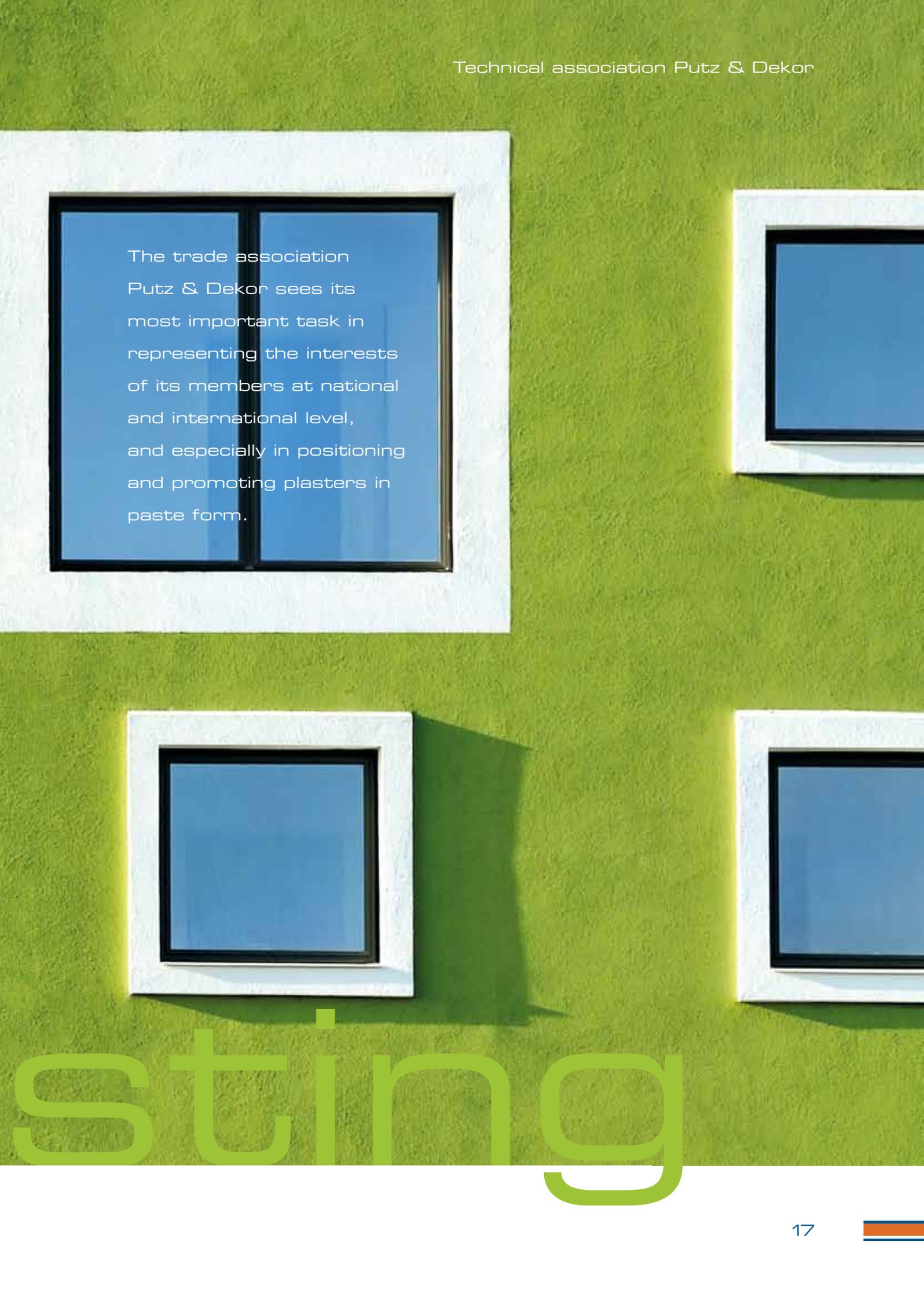
### Public relations

For the technical group Putz & Dekor communication is a high priority, internally as well as externally. On the one hand, a constant flow of information ensures that the members are aware of current progress in research and of the most recent legislation concerning them. On the other hand, its policy of active public relations ensures effective communication of the economic and environmental advantages of dispersion and organically bonded silicate and silicone-resin plasters with the aim of informing architects, investors, private home builders, public contractors, tradesmen and other groups interested in the performance achieved by these highly advanced materials.

Under [www.putz-dekor.org](http://www.putz-dekor.org), the technical group Putz & Dekor e.V. provides a comprehensive review of these products, their compositions and qualities as well as their processing and design potential. This is based on a fully revised and extended technical dictionary, the third edition of which is now available in paperback form.



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The trade association Putz & Dekor sees its most important task in representing the interests of its members at national and international level, and especially in positioning and promoting plasters in paste form.

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## Overview of the characteristics of plasters in paste form

### Physical characteristics

	Dispersion plaster	Silicate plaster, organically bound	Silicone-resin plaster
Binding agent	Polymer dispersion	Alkali Sodium Silicate + Polymer dispersion	Polymer dispersion + Silicone-resin emulsion
Elasticity	high	low	medium
Water-repellent effect and rain protection	good to very good	satisfactory to good	very good
Liquid water permeability kg/(m <sup>2</sup> x h <sup>0.5</sup> ) according to EN 15824	≤ 0.2	≤ 0.2	≤ 0.2
Water vapour permeability S <sub>d</sub> value (= equivalent air thickness in m), measurement according to EN ISO 7783-2	medium (class V2) > 0.14 to 0.5	high (class V1) < 0.14	high-medium (class V1–V2) > 0.1 bis 0.3
Technical assessment/specification	EN 15824		
Resistance to algae and fungi	Good; with additional algicides and fungicides, very good		

### Aesthetic properties

	Dispersion plaster	Silicate plaster, organically bonded	Silicone-resin plaster
Colour-shade range	Vivid colours can be achieved with inorganic + organic pigments	Only inorganic pigments suitable	Only inorganic pigments suitable
Texture and design	Very varied, depending on grain and application process		

### Application characteristics

	Dispersion plaster	Silicate plaster, organically bonded	Silicone-resin plaster
Suitable substrates	All loadbearing and correctly prepared substrates except mortar group P 1 according to DIN V 18550	Mineral substrates only, after adequate setting time	All loadbearing and correctly prepared substrates except mortar group P 1 a/b according to DIN V 18550
Processing	good		
Machine application	good		
Interior application	suitable		
Weather resistance	very good	good	very good
Chalk resistance	very good	medium	very good
Paintability	Dispersion paint, silicone-resin paint	Dispersion silicate paint, silicone-resin paint	Silicone-resin paint, dispersion paint
Reaction to fire (on mineral substrate)	Non-combustible / limited combustibility, class A–B according to EN 13501-1		

### Physiological and environmental characteristics

	Dispersion plaster	Silicate plaster, organically bound	Silicone-resin plaster
Marking in accordance with the ordinance on hazardous substances	none		
Disposal of residues	Dried and set, with household waste (with due regard to regional and national legislation and regulations)		
Disposal of containers	Residue-free, brush and spatula-clean, by authorised disposal company		



compact





Fachgruppe  
**Putz & Dekor**

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